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Serial No.: 10/006,124

Response to Official Action dated 13 June 2005

AMENDMENTS TO THE DRAWINGS

The attached drawing sheets include a change to each of Figures 2, 3, 4, 5, and 6, and replace the drawing sheets that included original Figures 2, 3, 4, 5, and 6 thereon. In each of Figures 2 – 6, the labels for the elements 24 and 34 have been corrected to coincide with the amended Specification language kindly suggested by the Examiner.

Attachment: Five (5) replacement sheets.

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REMARKS/ARGUMENTS

This case has been carefully reviewed and analyzed in view of the Official Action dated 13 June 2005. Responsive to the objections and rejections made in the Official Action, Claims 1, 3 – 6, 8, 10 and 12 – 13 have been amended to clarify the language thereof and the combination of elements which form the invention of the subject Patent Application.

In the Official Action, the Examiner objected to the Specification due to informalities therein. The Examiner objected to the term “speech synthesis unit” for the elements 24 and 34, since the function of those units, as described, was simply that of a digital to analog converter.

Accordingly, the Specification and Drawings have been amended to define the units 24 and 34 as digital to analog converter units, to coincide to the Examiner’s interpretation thereof. Additionally, several typographical and idiomatic errors have also been corrected in the Specification. No new matter has been added by these changes.

In the Official Action, the Examiner objected to Claims 1 – 13 for the same reasons as the Specification was objected to. Additionally, Claims 1 – 3 and 5 – 7 were rejected under 35 U.S.C. § 103(a), as being unpatentable over the Winbond Publication in view of Voltz, U.S. Patent No. 6,859,538. Claims 4, 8 and 9 were rejected under 35 U.S.C. § 103(a), as being unpatentable over Winbond in view of Applicant’s admitted prior art. Further, Claims 10 – 13 were rejected under 35

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U.S.C. § 103(a), as being unpatentable over Winbond in view of Voltz, and further in view of Applicant's admitted prior art.

Before discussing the prior art relied upon by the Examiner, it is believed beneficial to first briefly review the structure and method of the invention of the subject Patent Application, as now claimed. The invention of the subject Patent Application is directed to an integrated speech synthesizer with an automatic identification of speaker connections. The synthesizer includes a sound encode register for storing encoded digitized sound data. The synthesizer includes a first digital to analog converter unit connected to the sound encode register for converting the digitized data from the sound encode register to a first analog signal and sending out the first analog signal through a first output terminal. The synthesizer includes a second digital to analog converter unit connected to the sound encode register for converting the digitized sound data from the sound encode register to a second analog signal and sending out the second analog signal through a second output terminal and the first output terminal. The synthesizer further includes a state register connected to the first output terminal for detecting and storing a connection state of the first output terminal before the speech synthesizer is enabled. The state register has an output coupled to the sound encode register, the first digital to analog converter unit, and the second digital to analog converter unit to thereby automatically set up an initial value for the first and second digital to analog converters.

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The invention of the subject Patent Application is further directed to a method for automatic identification of speaker connections to an integrated speech synthesizer with a pair of digital to analog converter units, a first of the pair of digital to analog converter units sending out a first analog signal from a first output terminal, and a second of the pair of digital to analog converter units sending out a second analog signal from a second output terminal and the first output terminal. The method includes the step of setting the first output terminal to a high impedance state prior to the input of digital speech signals to the pair of digital to analog converter units. The method includes the step of sending out a preset voltage from the second output terminal, and detecting and storing a state of the first output terminal with a state register having an input coupled thereto. The detection and storing step occurs prior to the input of the digital speech signals. The method further includes the step of setting an initial value input to the pair of digital to analog converter units responsive to detected state stored in the state register.

In contradistinction, the Winbond reference is directed to a programmable speech synthesizer having a mask programmable pulse-width modulated (PWM) or DAC audio output function. The speech synthesizer of Winbond includes a sound encode register in the form of a read-only memory which provides input to a speech synthesizer having a digital to analog converter for output to one of a DAC audio output or a PWM output. While the reference discloses many

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functions which are selected through the use of a register, the reference teaches away from the use of a state register for initializing the speech synthesizer in accordance with the speaker connection made to the output of the integrated circuit. The Examiner has respectfully referred to page 7 wherein it is disclosed that there are four types of option controls in the integrated circuit that are mask selectable options (2nd Column of the last table on page 7), and "can not be controlled by register". Thus, the reference teaches away from utilizing a register for storing the state of an output connection for the integrated circuit speech synthesizer and is like the admitted prior art discussed in the Background. Therefore, the reference discloses no method for automatically detecting the state of the first output terminal, and fails to disclose setting the first output terminal to a high impedance state prior to input of digital speech signals to the pair of digital to analog converter units. The reference also fails to disclose setting an initial value input to the pair of digital to analog converter units responsive to the detected state stored in the state register, as claimed.

The Voltz reference does not overcome the deficiencies of Winbond. The Voltz reference is directed to a plug and play compatible speaker system wherein the speaker includes a memory 122 in which is stored identification codes, and wherein a computer to which the speakers are connected is pre-installed with a list of identification codes for speakers which are compatible therewith. Thus, there is nothing automatic about the disclosed system other than the computer being able

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to read the memory disposed in the speakers and compare the data therein with the pre-installed listing of compatible equipment. Nowhere does the reference disclose or suggest a state register connected to the first output terminal for detecting and storing a connection state of the first output terminal before a speech synthesizer is enabled, and fails to disclose or suggest the state register having an output coupled to the sound encode register, the first digital to analog converter unit, and the second digital to analog converter unit to thereby automatically set up an initial value for the first and second digital to analog converters, as now claimed. Rather than detecting the state of the output terminal, the reference simply reads the memory and compares the data read therefrom from data stored in a memory device coupled to the computer.

Nowhere does the reference disclose or suggest a method wherein the first output terminal is set to a high impedance state prior to input of digital speech signals to the pair of digital to analog converter units, as now claimed. Further, the reference neither discloses nor suggests a step of detecting and storing a state of the first output terminal with a state register having an input coupled thereto, the detection and storing step occurring prior to the input of the digital speech signals, as now claimed. Still further, the reference fails to disclose or suggest setting an initial value input to the pair of digital to analog converter units responsive to the detected state stored in the state register, as now claimed.

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Therefore, as neither Winbond nor Voltz disclose or suggest the combination of elements and/or method steps defined by the invention of the subject Patent Application, they cannot make obvious that invention. Further, it is respectfully submitted that as Winbond teaches away from the use of a register for storing the state of a speaker connection, it is not properly combinable with Voltz as the Examiner suggests.

The admitted prior art does not overcome the deficiencies of Winbond combined with Voltz. The prior art disclosed in the subject Patent Application is directed to speech synthesizers which have the ability for one type of output connection, which connection is determined by the mask utilized for forming the integrated circuit, resulting in an integrated circuit being useable for only one type of speaker connection. Therefore, the admitted prior art neither discloses nor suggest any detection circuit or method associated therewith. Nowhere does the admitted prior art disclose or suggest any method wherein the first output terminal is set to a high impedance state prior to input of digital speech signals to the pair of digital to analog converter units, as now claimed. Further, as there is no structure for detection or storage of the state of the first output terminal, there can be no step of detecting and storing a state of the first output terminal with a state register having an input coupled thereto, the detection and storing step occurring prior to the input of the digital speech signals, as now claimed. Still further, the reference neither discloses nor suggests the step of setting an initial value input to

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the pair of digital to analog converter units responsive to the detected state stored in the state register, as now claimed.

Therefore, as none of Winbond, Voltz or the admitted prior art disclose or suggest the combination of elements and/or method steps of the invention of the subject Patent Application, they cannot make obvious that invention, whether Winbond is combined with the admitted prior art, or Winbond, Voltz and the admitted art are combined together. Further, as Winbond and the admitted prior art teach away from the use of a register for identifying the speaker connection, it is respectfully submitted that any combination of references that would include a register for storing a speaker connection indication would be improper to include Winbond and/or the admitted prior art.

For all the foregoing reasons, it is now believed that the subject Patent Application has been placed in condition for allowance, and such action is respectfully requested.

Respectfully submitted,
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